

**ABSTRACT**

**[00146]** A method of monitoring a fluid storage and dispensing system having a measurement apparatus for measuring a volume of fluid associated with the system and a plurality of temperature sensing devices disposed at a plurality of locations within the system. The method includes collecting a plurality of measurement data from the measurement apparatus and the plurality of temperature sensing devices in a form readable by a computer; storing the plurality of measurement data in a compressed matrix format in a computer memory; and statistically analyzing the compressed matrix format to determine operational monitoring information and to calculate the volume of fluid based on the measurement data collected from the measurement apparatus and the plurality of temperature sensing devices.